
ISDN Signaling Link maintenance

ISL interfaces

The ISDN Signaling Link (ISL) feature provides the capability to replace both digital and analog conventional trunk signaling with out-of-band ISDN D-channel signaling. Call-by-Call (CBC) Service, Calling Line Identification (CLID) and CLID in Call Detail Recording (CDR), Electronic Switched Network (ESN) interworking, and Network Ring Again (NRAG) applications are supported.

The ISL feature supports TIE and ISA trunk types with Meridian 1 to Meridian 1 connectivity. The TIE lines and the trunk used for the D-channel may be leased from the Central Office (CO). With leased lines, the function of the CO is simply to provide the trunk facilities between Meridian 1 systems for circuit switched connections.

There are two modes of ISL operation:

- Shared mode: In the shared mode, the DCHI or MSDL supports ISDN PRI signaling as well as ISL trunks. See Figure 18. The configuration is basically the same as the PRI D-channel, but the D-channel also supports ISL trunks (analog or DTI).
- Dedicated mode: In the dedicated mode, the DCHI or MSDL does not support ISDN PRI signaling. See Figure 19. The DCHI or MSDL is reserved for ISL use. The D-channel can communicate with the far end by means of a dedicated leased line, dial-up modem, or DTI/PRI trunk.

Figure 18
ISDN signaling link: shared mode

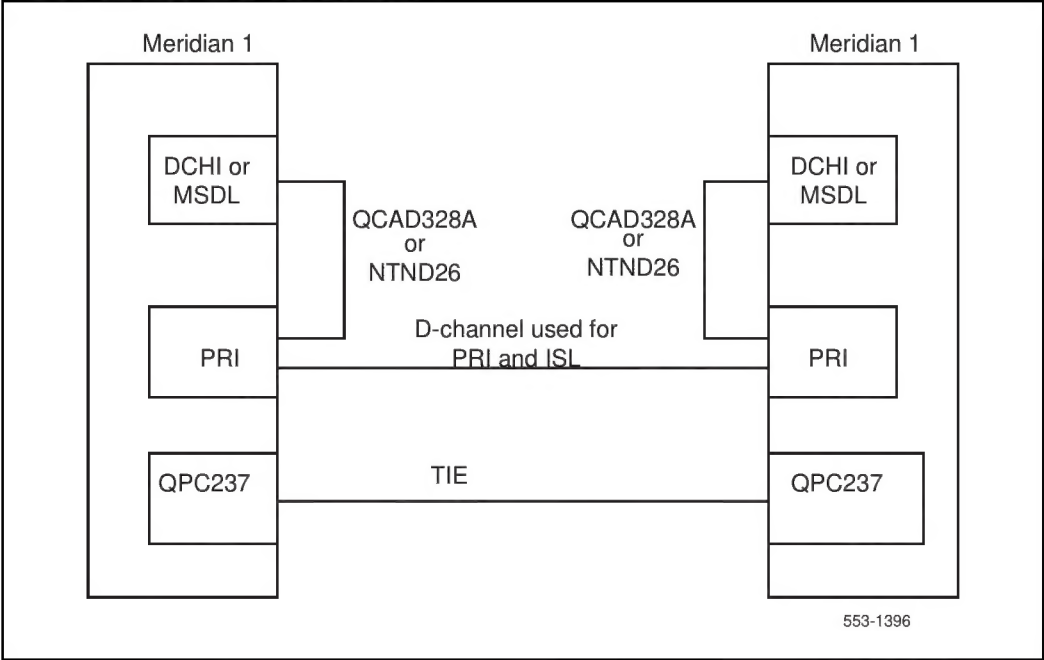
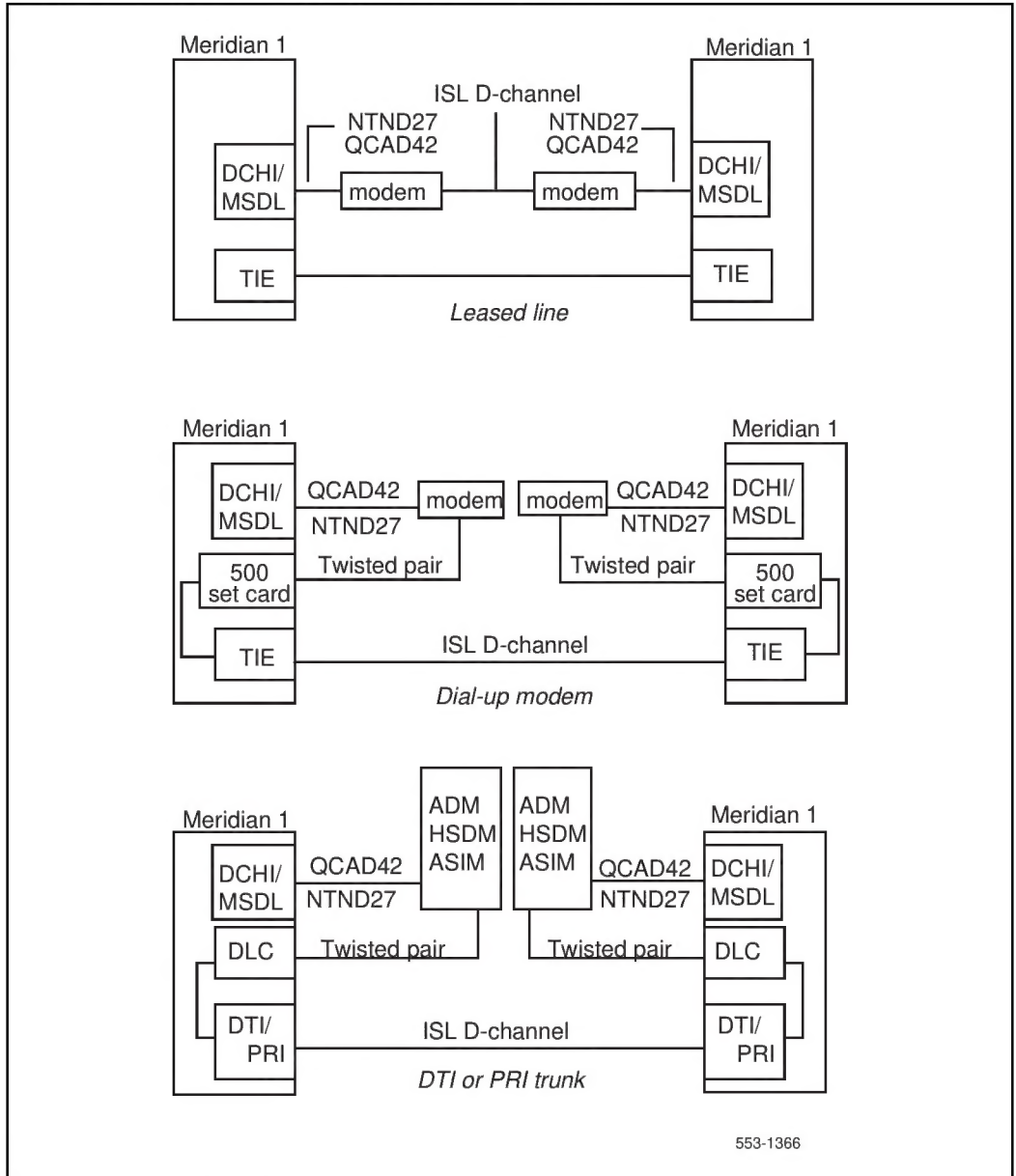


Figure 19
ISDN signaling link: dedicated mode configurations



ISL status formats

If a trunk unit is controlled by the ISL feature, the STAT commands in LD 32 and LD 36 will do the following:

- indicate the trunk is an ISL trunk, and
- display the status of the D-channel

The display format is the same for both programs. See Table 14.

Table 14
ISL status check in LD 32 and 36

Command	Response
STAT L S C	UNIT 00 = IDLE ISL TRK D-CH <ch #> <status> UNIT 01 = IDLE ISL TRK D-CH <ch #> <status>
STAT L S C U	IDLE ISL TRK D-CH <ch #> <status>

When a trunk unit is controlled by ISL, the STAT L command in LD 60 indicates the trunk is an ISL trunk. The STAT L CH command indicates the trunk is an ISL trunk and displays the status of the D-channel. The display format is shown in Table 15.

Table 15
ISL status check in LD 60

Command	Response
STAT L	CH 1 = IDLE ISL TIE CH 2 = UNEQUIP
STAT L CH	CH 1 = IDLE ISL TIE?D-ch <ch #> <status>

Print programs (LD 20-22)

Print programs LD 20, LD 21, and LD 22 (see Table 16) provide the following ISL information:

- LD 20 prints trunk information
- LD 21 prints route information
- LD 22 prints configuration record information

Table 16
ISL prompts in LD 20, LD 21, and LD 22

Program	Prompt	Description
LD 20	CHID nn	Channel ID
LD 21	MODE ISL/PRI DCHI x	ISL or PRI service route DCHI port number (printed if MODE = ISL)
LD 22	USR PRI/ISL/SHA	D-channel for PRI only, ISL D-channel for (dedicated mode), or SHA= D-channel shared between PRI and ISL
	ISLM x	maximum number of ISL trunks

LD 21 also lists the ISL trunk terminal numbers (TNs) configured in the system and counts the number of ISL trunks controlled by the DCH (see Table 17). To list ISL trunk TNs use the following prompts:

REQ PRT
TYPE ISLL

Table 17
Additional ISL information provided in LD 21

Cust #	ISL Trunk TN	Channel ID	DCH #	Route #
xx	l s c u	xxx	xx	xxx
xx	l s c u	xxx	xx	xxx

ISL start-up

In general, the procedures for bringing up the D-channel are the same as the ISDN PRI interface (see the PRI start-up section). However, some additional procedures are required when ISL is configured in the dedicated mode using DTI or PRI trunks.

Dedicated D-channel using DTI or PRI

When the D-channel is configured in the dedicated mode using a DTI or PRI trunk, an Asynchronous Data Module (ADM), an Asynchronous/Synchronous Interface Module (ASIM), or a High Speed Data Module (HSDM) is required between the DCHI or MSDL cards and the Data Line Card (DLC).

Note: The configuration with a DTI or PRI meets Radio Frequency Interference (RFI) requirements. The RFI filter connectors are attached to the QCAD42A cable. To install the RFI filters, see the instructions for installing the EMI filters in the system installation documents.

The following signaling sequence is required between the DCHI or MSDL cards and the ADM, HSDM, or ASIM to establish the D-channel:

- 1 The ADM, ASIM, or HSDM is already powered up.
- 2 The ADM, ASIM, or HSDM raises clear to send (CTS) and data set ready (DSR) signals to the DCHI or MSDL.
- 3 The DCHI or MSDL raises the data terminal ready (DTR) signal to the ADM, ASIM, or HSDM.
- 4 The ADM, ASIM, or HSDM makes the hotline call (the programmed auto-dial DN) to the far end switch using a DTI or PRI trunk line, depending on the DN configured.
- 5 The call is established and the CONNECT lamp on the ADM, ASIM, or HSDM is lit.
- 6 The D-channel is established.

ISL recovery

The D-channel will go down if the following occurs:

- the modem, ADM, ASIM, or HSDM power is off
- the hotline call between the Meridian 1 and the modem, ADM, ASIM, or HSDM is dropped

The Meridian 1 system handles these possibilities in the following way:

- 1** The Meridian 1 CPU schedules a data link diagnostics program, which runs in background mode.
- 2** If this program finds that the link is not established, it requests the maintenance program to reestablish the data link by reinitializing the hotline connection.
- 3** The hotline call is brought up as it is during installation.

The ASIM can automatically reinitiate the hotline call with the Forced DTR option set to ON.

A modem with auto-dial capability is required to automatically bring up the D-channel in the configuration below.

Note: The Radio Frequency Interference (RFI) filter connectors are attached to the QCAD42 cable. To install the RFI filters, see the instructions for installing the EMI filters in the system installation documents.

